

GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: November 30, 2002, 12:33:53 : Search time 12.5 Seconds
(without alignments)
3868.449 Million cell updates/sec

Title: US-10-025-514-16

Perfect score: 2675

Sequence: 1 MEDPQGAQAQKTDTSHHDDQ.....RDLKCCMGKSCVSPVKA 503

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 283224 seqs, 96134422 residues

Total number of hits satisfying chosen parameters: 283224

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

PIR_73:*
1: p1r1:*
2: p1r2:*
3: p1r3:*
4: p1r4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	2030	75.9	418	1	ITHU
2	1894	70.8	409	1	alpha-1-antitrypsin
3	1455.5	54.4	411	1	ITRT
4	1455	54.4	416	1	ITSH
5	1446.5	54.1	413	2	S60036
6	1434	53.6	416	2	S21097
7	1374	51.4	406	2	JX0346
8	1342	50.2	413	2	S54981
9	1338	50.0	413	2	JX0154
10	1335	49.9	413	2	I49470
11	1334	49.9	402	2	I49471
12	1333	49.8	413	2	I49452
13	1329	49.7	413	2	I49472
14	1325	49.5	413	2	JX0267
15	1316	49.2	413	2	I49473
16	1310	49.0	413	2	I56481
17	1307	48.9	413	2	A54968
18	1302	48.7	413	2	I49474
19	1295.5	48.4	412	1	ITMSC
20	1293	48.3	405	2	A39088
21	1246	46.6	410	2	C39088
22	1187.5	44.4	388	2	B39088
23	1158.5	43.3	410	2	A45457
24	1140	42.6	420	2	A28882
25	845	31.6	410	2	I50494
26	829	31.0	418	2	JX0129
27	829	31.0	418	2	ITHUC
28	821.5	30.7	416	2	B29131
29	818	30.6	418	2	S23675

30 816 30.5 406 2 A39339
31 816 30.5 406 2 I53281
32 816 30.5 427 2 A49518
33 815.5 30.5 405 2 A28321
34 811 30.3 383 2 A36117
35 810.5 30.3 418 2 JH0494
36 810 30.3 408 2 S11320
37 804 30.1 417 2 S19724
38 803 30.0 403 2 S08102
39 796 29.8 430 2 A49190
40 787.5 29.4 415 2 A47224
41 786.3 29.4 412 2 I46421
42 774.5 29.0 418 2 A39567
43 771.5 28.8 418 1 S31507
44 742 27.7 412 2 S31505
45 739 27.6 372 2 I50492

ALIGNMENTS

RESULT 1

ITHU

alpha-1-antitrypsin precursor [validated] - human
N: Alternate names: alpha-1-AT; alpha-1-proteinase inhibitor
C: Species: Homo sapiens (man)
C: Date: 30-Nov-1980 #sequence_revision 31-Mar-1992 #text_change 15-Sep-2000
C: Accession: A21853; B21853; A90944; A58528; A23174; A93281; A32336; S14476;
R: Long, G.L.; Chandra, T.; Woo, S.L.C.; Davie, E.W.; Kurachi, K.
Biochemistry 23, 4828-4837, 1984
A: Title: Complete sequence of the cDNA for human alpha-1-antitrypsin and the gene for
A: Reference number: A21853; MUID:85047190; PMID:6093867
A: Accession: A21853
A: Molecule type: mRNA
A: Residues: 1-418 <LONI>
A: Cross-references: GB:K02212; NID:g177830
A: Experimental source: M (normal) allele
A: Accession: B21853
A: Molecule type: DNA
A: Residues: 1-287, 'V', '289-418 <LON2>
A: Cross-references: GB:K02212; NID:g177830; PIDN:AAB59495.1; PID:g177831
A: Experimental source: S variant allele
R: Rosenberg, S.; Barr, P.J.; Najarian, R.C.; Hallowell, R.A.
Nature 312, 77-80, 1984
A: Title: Synthesis in yeast of a functional oxidation-resistant mutant of human alpha
A: Reference number: A93352; MUID:85036645; PMID:6387509
A: Accession: A93352
A: Molecule type: mRNA
A: Residues: 1-124, 'H', '126-325, 'I', '327-418 <ROS>
A: Cross-references: EMBL:X01683; NID:g28965
R: Bollen, A.; Herzog, A.; Cravador, A.; Herion, P.; Chuchana, P.; Vander Straten, A.;
DNA 2, 255-264, 1983
A: Title: Cloning and expression in Escherichia coli of full-length complementary DNA
A: Reference number: A90944; MUID:84107980; PMID:6319097
A: Accession: A90944
A: Molecule type: mRNA
A: Residues: 1-138, 'DG', '141-272, 'N', '274-418 <BOL>
A: Cross-references: GB:K01396; NID:g28965
A: Note: This sequence has been corrected in reference A58528
R: Colau, B.; Chuchana, P.; Bollen, A.
DNA 3, 327-330, 1984
A: Title: Revised sequence of full-length complementary DNA coding for human alpha-1-a
A: Reference number: A58528; MUID:85026667; PMID:6333329
A: Contents: corrections to sequence in A90944
A: Accession: A58528
A: Molecule type: mRNA
A: Residues: 1-418 <COL>
A: Cross-references: GB:K01396; NID:g28965; PIDN:CAA25838.1; PID:g28966
R: Ciliberto, G.; Dente, L.; Cortese, R.
Cell 41, 531-540, 1985
A: Title: Cell-specific expression of a transfected human alpha-1-antitrypsin gene.
A: Reference number: A23174; MUID:85176977; PMID:2985281
A: Accession: A23174

protein C inhibitor
corticosteroid-bln
kallistatin precus
corticosteroid-bln
corticosteroid-bln
alpha-1-antichymot
serine proteinase
kallikrein-binding
serine proteinase
corticosteroid-bln
thyroxine-binding
thyroxine-binding
serine proteinase
serine proteinase
alpha-1-antitrypsin

A:Molecule type: mRNA
A:Residues: 1-11,13-173,'H',175-228,'D',230-418 <CIL>
A:Cross-references: GB:M11465; NID:g177826; PIDN:AA51546.1; PID:g177827
A:Note: The authors state that this sequence corresponds to the M (normal) allele; 3 variants.
R:Carrell, R.W.; Jeppsson, J.O.; Laurell, C.B.; Brennan, S.O.; Owen, M.C.; Vaughan, L.; Nature 298, 329-334, 1982
A:Title: Structure and variation of human alpha-1-antitrypsin.
A:Reference number: A93281; MUID:82220135; PMID:7045697
A:Accession: A93281
A:Molecule type: protein
A:Residues: 25-418 <CAR>
A:Note: peptide sequence differences with A21853 (Leu-200 and the amidation states of R200 and R201).
R:Zhu, X.J.; Kang, S.S.; Hargrove, K.; Shochat, D.; Jarrells, M.; Mojesky, M.; Chan, S.K. Biochem. J. 246, 25-36, 1987
A:Title: The identification of epitopic sites in human alpha-1-proteinase inhibitor.
A:Reference number: A23336; MUID:88049621; PMID:2445337
A:Accession: A23336
A:Molecule type: protein
A:Residues: 25-418 <ZHU>
A:Note: peptides were sequenced or partially sequenced and ordered by comparison with A21853.
R:Welland, K.L.; Falany, C.N.; Dooley, T.P. submitted to the EMBL Data Library, December 1989
A:Description: Identification of a cDNA encoding a variant form of the human proteolytic inhibitor.
A:Reference number: S14476
A:Accession: S14476
A:Molecule type: mRNA
A:Residues: 142-230,'Y',232-338 <WEI>
A:Cross-references: EMBL:X17122; NID:g28636; PIDN:CAA34982.1; PID:g28637
A:Experimental source: a variant form
R:Riley, J.H.; Bathurst, I.C.; Ebbrooke, M.R.; Carrell, R.W.; Craig, R.K. FEBS Lett. 189, 361-366, 1985
A:Title: Alpha-1-antitrypsin and serum albumin mRNA accumulation in normal, acute phase and chronic liver disease.
A:Reference number: A24013; MUID:86005469; PMID:3876243
A:Accession: A24013
A:Molecule type: mRNA
A:Residues: 292-418 <RTL>
A:Cross-references: EMBL:X02920; NID:g24437; PIDN:CAA26677.1; PID:g24438
R:Schulze, A.J.; Baumann, U.; Knof, S.; Jaeger, E.; Huber, R.; Laurell, C.B. Eur. J. Biochem. 194, 51-56, 1990
A:Title: Structural transition of alpha(1)-antitrypsin by a peptide sequentially similar to the alpha(1)-antitrypsin.
A:Reference number: S13833; MUID:91071209; PMID:2253623
A:Accession: S13833
A:Molecule type: protein
A:Residues: 25-41 <SCH>
R:Niemann, M.A.; Narkates, A.J.; Miller, E.J. Matrix 12, 233-241, 1992
A:Title: Isolation and serine protease inhibitory activity of the 44-residue, C-terminal fragment of alpha(1)-antitrypsin.
A:Reference number: S23516; MUID:93024095; PMID:1406456
A:Accession: S23516
A:Molecule type: protein
A:Residues: 375-409,'L',411-413,'S' <NIE>
R:Dengler, R.; Eger, G.; Lottspeich, F.; Plewan, A.; Ogilvie, A.; Emmerich, B. Biol. Chem. Hoppe-Seyler 373, 581-588, 1992
A:Title: Proteolytic inactivation of alpha(1)-proteinase inhibitor in vivo: detection, characterization and inhibition.
A:Reference number: S23962; MUID:92384968; PMID:1515087
A:Accession: S23962
A:Molecule type: protein
A:Residues: 44-53;384-392 <DEN>
R:Dengler, R.; Lottspeich, F.; Oberthuer, W.; Mast, A.E.; Emmerich, B. Biol. Chem. Hoppe-Seyler 376, 165-172, 1995
A:Title: Limited proteolysis of alpha(1)-proteinase inhibitor (alpha(1)-PI) in acute leukemia.
A:Reference number: S55249; MUID:95336645; PMID:7612193
A:Accession: S55249
A:Molecule type: protein
A:Residues: 25-28;43-47;207-208;382-389;414-418 <DE2>
R:Leicht, M.; Long, G.L.; Chandra, T.; Kurachi, K.; Kidd, V.J.; Mace, M. Nature 297, 655-659, 1982
A:Title: Sequence homology and structural comparison between the chromosomal human alpha(1)-antitrypsin and the alpha(1)-antitrypsin.
A:Reference number: I39371; MUID:82220035; PMID:6979115
A:Accession: I39371
A:Status: translated from GB/EMBL/DBJ
A:Molecule type: DNA
A:Residues: 1-67 <LEI1>

A:Cross-references: GB:J00064; NID:g177817; PIDN:AA59369.1; PID:g177822
A:Accession: I39372
A:Status: translated from GB/EMBL/DBJ
A:Molecule type: DNA
A:Residues: 196-225 <LEI2>
A:Cross-references: GB:J00066; NID:g177819; PIDN:AA59370.1; PID:g177823
R:Chang, W.S.W.; Wardell, M.R.; Lomas, D.A.; Carrell, R.W. Biochem. J. 314, 647-653, 1996
A:Title: Probing serpin reactive-loop conformations by proteolytic cleavage.
A:Reference number: S63599; MUID:96239126; PMID:8670081
A:Accession: S63599
A:Molecule type: protein
A:Residues: 371-385 <CHA>
R:Coutelle, C.; Speer, A.; Rogers, J.; Kalsheker, N.; Humphries, S.; Williamson, R. Biomed. Biochim. Acta 44, 421-431, 1985
A:Title: Construction and partial characterization of a human liver cDNA library.
A:Reference number: I39370; MUID:85225507; PMID:3873938
A:Accession: I39370
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 387-399,'D',401-418 <COU>
A:Cross-references: GB:M26123; NID:g177815; PIDN:AA51545.1; PID:g177816
R:Faber, J.P.; Weidinger, S.; Olek, K. Am. J. Hum. Genet. 46, 1158-1162, 1990
A:Title: Sequence data of the rare deficient alpha-1-antitrypsin variant PI Zaugsburg submitted to the Brookhaven Protein Data Bank, September 1988
A:Reference number: A35338; MUID:90252805; PMID:2339709
A:Accession: A35338
A:Status: nucleic acid sequence not shown; not compared with conceptual translation
A:Molecule type: DNA
A:Residues: 122-124,'H',126-128;363-365,'K',367-369 <FAB>
A:Experimental source: mutant PI Zaugsburg
A:Note: this Z mutation with Lys-366 arose from the M2 variant with His-125
R:Loebermann, H.; Tokuko, R.; Deisenhofer, J.; Huber, R. submitted to the Brookhaven Protein Data Bank, September 1988
A:Reference number: A50794; PDB:8API
A:Contents: annotation: X-ray crystallography, 3.1 angstroms, hexagonal form, residue
R:Loebermann, H.; Tokuko, R.; Deisenhofer, J.; Huber, R. submitted to the Brookhaven Protein Data Bank, September 1988
A:Reference number: A50810; PDB:9API
A:Contents: annotation: X-ray crystallography, 3.0 angstroms, tetragonal form 2, residue
R:Loebermann, H.; Tokuko, R.; Deisenhofer, J.; Huber, R. J. Mol. Biol. 177, 531-556, 1984
A:Title: Human alpha-1-proteinase inhibitor. Crystal structure analysis of two crystals.
A:Reference number: A58525; MUID:84292309; PMID:6332197
A:Contents: annotation: X-ray crystallography, 3.0 angstroms
R:Carrell, R.W.; Jeppsson, J.O.; Vaughan, L.; Brennan, S.O.; Owen, M.C.; Boswell, D.R. FEBS Lett. 135, 301-303, 1981
A:Title: Human alpha-1-antitrypsin: carbohydrate attachment and sequence homology.
A:Reference number: A58526; MUID:82095611; PMID:6976274
A:Contents: annotation: carbohydrate attachment sites
C:Comment: The Z variant allele has Lys-366. Deficiency of the normal inhibitor in sis.
C:Genetics:
A:Gene: GDB:PI
A:Cross-references: GDB:120289; OMIM:107400
A:Map position: 14q32.1-14q32.1
A:Introns: 216/1; 306/2; 355/3
A:Note: the first intron occurs before the initiator codon
C:Function:
A:Description: inhibitor of serine proteinases, primarily leukocyte elastase and collagenase. It also inhibits plasmin, thrombin, kallikrein, trypsin, and chymotrypsin
C:Superfamily: antithrombin III
C:Keywords: acute phase; emphysema; glycoprotein; plasma; polymorphism; serine protease; signal sequence; status predicted <SIG>
F:1-24/Domain: signal sequence status experimental <MAT>
F:25-418/Product: alpha-1-antitrypsin #status experimental
F:70,107,271/Binding site: carbohydrate (Asn) (covalent) #status experimental
F:382/Inhibitory site: Met (elastase, collagenase) #status experimental
Query Match 75.9%; Score 2030; DB 1; Length 418;

Best Local Similarity 100.0%; Pred. No. 1.1e-124;
Matches 394; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 EDPOGDAQAOKTDSHHDDQHPFNKTPNLAFAFSLYRQLAHQSNSTNIFSPVSIATA 61
|||||
Db 25 EDPOGDAQAOKTDSHHDDQHPFNKTPNLAFAFSLYRQLAHQSNSTNIFSPVSIATA 84
|||||
QY 62 FAMLSTGTRADTHDELEGLENLNLTEIPAQIHGEGFOELLRLTNQPSQLQTTGNGLFL 121
|||||
Db 85 FAMLSTGTRADTHDELEGLENLNLTEIPAQIHGEGFOELLRLTNQPSQLQTTGNGLFL 144
|||||
QY 122 SEGLKLVDPKLEVDKLYHSEAFVNFNGDTEEAQKQINDYVEKGTQGVKIDLVKELDRDT 181
|||||
Db 145 SEGLKLVDPKLEVDKLYHSEAFVNFNGDTEEAQKQINDYVEKGTQGVKIDLVKELDRDT 204
|||||
QY 182 VFALVNYIFFKCKWERPFVKTEEDFHVQDVTYVPMKRLGMFNIHQHCKLSSWVL 241
|||||
Db 205 VFALVNYIFFKCKWERPFVKTEEDFHVQDVTYVPMKRLGMFNIHQHCKLSSWVL 264
|||||
QY 242 LMKYLGNAATAIFFLPDEGKLQHLNELTHDIITKFLNEDRRSASLHLPKLSITGTYDLK 301
|||||
Db 265 LMKYLGNAATAIFFLPDEGKLQHLNELTHDIITKFLNEDRRSASLHLPKLSITGTYDLK 324
|||||
QY 302 SVLGQLGITKTVFSNGADLSGVTEAPLKLKSAVHKAVLTIDEKGTAAAGAMFLEAIPMSI 361
|||||
Db 325 SVLGQLGITKTVFSNGADLSGVTEAPLKLKSAVHKAVLTIDEKGTAAAGAMFLEAIPMSI 384
|||||
QY 362 PPEVKFNKPFVFLMTEQNTKSPFLMGKVNPPTQK 395
|||||
Db 385 PPEVKFNKPFVFLMTEQNTKSPFLMGKVNPPTQK 418
|||||

RESULT 2

ITRT

alpha-1-antitrypsin precursor - baboon (fragment)

N:Alternate names: alpha-1-proteinase inhibitor

C:Species: Papio sp. (baboon)

C:Date: 02-Apr-1982 #sequence_revision 02-Apr-1982 #text_change 18-Jun-1999

C:Accession: A01248

Proc. Natl. Acad. Sci. U.S.A. 78, 6826-6830, 1981

A:Title: Cloning and sequence of cDNA coding for alpha-1-antitrypsin.

A:Reference number: A01248; MUID:82082539; PMID:7031661

A:Accession: A01248

A:Molecule type: mRNA

A:Residues: 1-409 <KUR>

A:Cross-references: GB:J00321; NID:g176561; PIDN:AAA35377.1; PID:g176562

C:Comment: Alpha-1-antitrypsin is an inhibitor of serine proteinases. Its primary target

psln.

C:Superfamily: antithrombin III

C:Keywords: acute phase; glycoprotein; plasma; serine proteinase inhibitor

F:1-15/Domain: signal sequence (fragment) #status predicted <SIG>

F:16-409/Product: alpha-1-antitrypsin #status predicted <MAT>

F:61.98.262/Binding site: carbonyl site: (Asn) (covalent) #status predicted

F:373/Inhibitory site: Met (elastase, collagenase) #status predicted

Query Match 70.8%; Score 1894; DB 1; Length 409;
Best Local Similarity 92.4%; Pred. No. 7.3e-116;
Matches 364; Conservative 19; Mismatches 11; Indels 0; Gaps 0;

QY 2 EDPOGDAQAOKTDSHHDDQHPFNKTPNLAFAFSLYRQLAHQSNSTNIFSPVSIATA 61
|||||
Db 16 EDPOGDAQAOKTDSHHDDQHPFNKTPNLAFAFSLYRQLAHQSNSTNIFSPVSIATA 75
|||||
QY 62 FAMLSTGTRADTHDELEGLENLNLTEIPAQIHGEGFOELLRLTNQPSQLQTTGNGLFL 121
|||||
Db 76 FAMLSTGTRADTHDELEGLENLNLTEIPAQIHGEGFOELLRLTNQPSQLQTTGNGLFL 135
|||||
QY 122 SEGLKLVDPKLEVDKLYHSEAFVNFNGDTEEAQKQINDYVEKGTQGVKIDLVKELDRDT 181
|||||
Db 136 NKSLKVVDPKLEVDKLYHSEAFVNFNGDTEEAQKQINDYVEKGTQGVKIDLVKELDRDT 195
|||||
QY 182 VFALVNYIFFKCKWERPFVKTEEDFHVQDVTYVPMKRLGMFNIHQHCKLSSWVL 241
|||||

Db 196 VFALVNYIFFKCKWERPFVKTEEDFHVQDVTYVPMKRLGMFNIHQHCKLSSWVL 255
|||||
QY 242 LMKYLGNAATAIFFLPDEGKLQHLNELTHDIITKFLNEDRRSASLHLPKLSITGTYDLK 301
|||||
Db 256 LMKYLGNAATAIFFLPDEGKLQHLNELTHDIITKFLNEDRRSASLHLPKLSITGTYDLK 315
|||||
QY 302 SVLGQLGITKTVFSNGADLSGVTEAPLKLKSAVHKAVLTIDEKGTAAAGAMFLEAIPMSI 361
|||||
Db 316 TVLGHGTLGTVKTVFSNGADLSGVTEAPLKLKSAVHKAVLTIDEKGTAAAGAMFLEAIPMSI 375
|||||
QY 362 PPEVKFNKPFVFLMTEQNTKSPFLMGKVNPPTQK 395
|||||
Db 376 PPEVKFNKPFVFLMTEQNTKSPFLMGKVNPPTQK 409
|||||

RESULT 3

ITRT

alpha-1-antitrypsin precursor - rat

N:Alternate names: alpha-1-proteinase inhibitor

C:Species: Rattus norvegicus (Norway rat)

C:Date: 31-Mar-1992 #sequence_revision 31-Dec-1993 #text_change 16-Jun-2000

C:Accession: A33892; B33892; S08016; JX0123; A38823

Biochemistry 29, 323-329, 1990

A:Title: Molecular cloning and primary structure of rat alpha-1-antitrypsin.

A:Reference number: A33892; MUID:90148955; PMID:2302382

A:Accession: A33892

A:Molecule type: mRNA

A:Residues: 4-411 <CHA>

A:Cross-references: GB:M32247; NID:g203062; PIDN:AAA40788.1; PID:g203063

A:Accession: B33892

A:Molecule type: protein

A:Residues: 25-57 <CH2>

R:Flink, I.L.; Bailey, T.; Morkin, E.

submitted to the EMBL Data Library, August 1989

A:Reference number: S08016

A:Accession: S08016

A:Molecule type: mRNA

A:Residues: 188-246; 'I', 248-321, 'D', 323-389 <FLI>

A:Cross-references: EMBL:X16273; NID:g57299; PIDN:CAA34349.1; PID:g930263

R:Misumi, Y.; Sohma, M.; Ohkubo, K.; Takami, N.; Oda, K.; Ikehara, Y.

J. Biochem. 108, 230-234, 1990

A:Title: Molecular cloning and sequencing of the cDNA of rat alpha-1-protease inhibitor

A:Reference number: JX0123; MUID:91035351; PMID:2229024

A:Accession: JX0123

A:Molecule type: protein

A:Residues: 1-13; 'G', 15-83; 'V', 85-247, 'Y', 249-317, 'N', 319-411 <MIS>

A:Cross-references: GB:D00675; NID:g220648; PIDN:BAA00579.1; PID:g220649

A:Experimental source: serum

A:Accession: A38823

A:Molecule type: protein

A:Residues: 25-45 <MI2>

C:Comment: Alpha-1-antitrypsin is an inhibitor of serine proteinases. Its primary tar

psln.

C:Superfamily: antithrombin III

C:Keywords: acute phase; glycoprotein; plasma; serine proteinase inhibitor

F:1-24/Domain: signal sequence #status predicted <SIG>

F:25-411/Product: alpha-1-antitrypsin #status experimental <MAT>

F:64.101.265/Binding site: carbonyl site: (Asn) (covalent) #status predicted

F:376/Inhibitory site: Met (elastase, collagenase) #status predicted

Query Match 54.4%; Score 1455.5; DB 1; Length 411;
Best Local Similarity 70.2%; Pred. No. 2.6e-87;
Matches 271; Conservative 63; Mismatches 51; Indels 1; Gaps 1;

QY 9 AQTDTSHHQDHPFNKTPNLAFAFSLYRQLAHQSNSTNIFSPVSIATAFAMLSLG 68
|||||
Db 27 AQETDSQQDQS-PTRYKISSNLADFAFSLYRELHQSNSTNIFSPVSIATAFAMLSLG 85
|||||
QY 69 TKADTHDELEGLENLNLTEIPAQIHGEGFOELLRLTNQPSQLQTTGNGLFLSEGLKLV 128
|||||
Db 86 SKGTRKQILEGLEFNLTIQTPADIIHKAHHLTLNRPDSEQLQNTGNGLFVYNNKLV 145
|||||

A:Molecule type: mRNA
A:Residues: 1-416 <SIN>
A:Cross-references: EMBL:X63129; NID:g41; PIDN:CAN44840.1; PID:g42
A:Note: the sequence from Fig. 2 is inconsistent with that from Fig. 1 in having 209-Thr
R:Sinha, D.; Yang, X.; Emig, F.; Kirby, E.P.
J. Biochem. 115, 387-391, 1994
A:Title: Isolation and characterization of two protease inhibitors from bovine plasma.
A:Reference number: PX0072; MUID:94334275; PMID:8056747
A:Accession: PC2040
A:Molecule type: protein
A:Residues: 25-44 <SI2>
A:Cross-references: GB:577822; NID:g998663; PIDN:AAB33367.1; PID:g998664
A:Title: Plasma alpha-1-antitrypsinase from the Mongolian gerbil, Meriones unguiculatus:
A:Reference number: JX0346; MUID:95155268; PMID:7852275
A:Accession: JX0346
A:Molecule type: mRNA
A:Residues: 1-406 <GOT>
A:Cross-references: GB:577822; NID:g998663; PIDN:AAB33367.1; PID:g998664
A:Accession: PC2357
A:Molecule type: protein
A:Residues: 25-44/77-96 <GO2>
A:Experimental source: plasma
C:Superfamily: antithrombin III
C:Keywords: glycoprotein
F:1-24/Domain: signal sequence #status predicted <SIG>
F:25-406/Product: alpha-1-antitrypsinase #status predicted <MAT>
F:383-387/Region: serpin binding #status predicted

Query Match 53.6%; Score 1434; DB 2; Length 416;
Best Local Similarity 69.7%; Pred. No. 6.7e-86;
Matches 272; Conservative 58; Mismatches 58; Indels 2; Gaps 1;
Qy 5 QGDAQAQTDTHSHDQDHTFNKTPNLAFAFSLYROLAQHSNSTNIFFSPVSIATAFAM 64
Db 28 QGHAVQETDDTSHOE--AACHKIAPNLANFAFSYHHLAQHSNTSNIFFSPVSIATAFAM 85
Qy 65 LSLGKADTHDEILEGLNFNLTPEAQIHGEGQELLRTLNQDLSQQLTGTGNGLSGLKLV 124
Db 86 LSLGAKGNTHTLILKGLGNLTLEAAEIHKGFOHLLHTLNQPHOQLTGTGNGLSGLKLV 145
Qy 125 LKLVDFLEDVKLYHSEAFVFGDTEEDFHVQVTVKVPMMKRLGHNFIHQCKKLSWSVLLMK 244
Db 146 AKLVDTLEDVKLYHSEAFSINFRDAEAKKINDYVEKSGHGVKLYVLDPTVFA 205
Qy 185 LVNTIFKQKWERPFVKDTEEDFHVQVTVKVPMMKRLGHNFIHQCKKLSWSVLLMK 244
Db 206 LVNYSFKGKWERPFKMKHTTDRFHVDEQTVKVPMMNRLGMFGLHYCDKLASWVLLD 265
Qy 245 YLGNTAIFFLPDGKLOHLENLTHTDITKLENEEDRRSASLHLPKLSITGTGYDLKSVL 304
Db 266 YGVNTACFILPDGLKQLQQLLEKLNELLAKFLEKTYASSANLHLPKLSITGTGYDLKSVL 325
Qy 305 GOLGKITVFGNADLSGVTEAPLKLSKAVHKAVLTIDEKGTAAAGAMFLEAIPMSIPPE 364
Db 326 GDVGITEVFSDRADLSGITREQLPKVSKALHKAALTIDEKGTAVGSTFLEAIPMSIPPD 385
Qy 365 VKFNKPFVFLMIEQNTKSPFLPMGKVVNPTQ 394
Db 386 VEFNRPFCLYDRNTKSPFLPMGKVVNPTQ 415

RESULT 7
JX0346
alpha-1-antitrypsinase precursor - Mongolian jird
C:Species: Meriones unguiculatus (Mongolian jird)
C:Date: 22-Apr-1995 #sequence_revision 26-May-1995 #text_change 28-May-1999
C:Accession: JX0346; PC2357
R:Goto, K.; Suzuki, Y.; Yoshida, K.; Yamamoto, K.; Sinohara, H.
J. Biochem. 116, 582-598, 1994
A:Title: Plasma alpha-1-antitrypsinase from the Mongolian gerbil, Meriones unguiculatus:
A:Reference number: JX0346; MUID:95155268; PMID:7852275
A:Accession: JX0346
A:Molecule type: mRNA
A:Residues: 1-406 <GOT>
A:Cross-references: GB:577822; NID:g998663; PIDN:AAB33367.1; PID:g998664
A:Accession: PC2357
A:Molecule type: protein
A:Residues: 25-44/77-96 <GO2>
A:Experimental source: plasma
C:Superfamily: antithrombin III
C:Keywords: glycoprotein
F:1-24/Domain: signal sequence #status predicted <SIG>
F:25-406/Product: alpha-1-antitrypsinase #status predicted <MAT>
F:383-387/Region: serpin binding #status predicted

F:59-96,134,260,403/Binding site: carbohydrate (Asn) (covalent) #status predicted
F:371/Inhibitory site: Met (trypsin, chymotrypsin, elastase) #status predicted

Query Match 51.4%; Score 1374; DB 2; Length 406;
Best Local Similarity 68.7%; Pred. No. 5.2e-82;
Matches 265; Conservative 56; Mismatches 59; Indels 6; Gaps 2;
Qy 9 AOKTDTSHDQDHTFNKTPNLAFAFSLYROLAQHSNSTNIFFSPVSIATAFAMLSIG 68
Db 27 AEKTDSSH--QDQ----IMASNLADFAGLYRVLVSHQSNNTNIFLSPSLIATLALMSIG 80
Qy 69 TKADTHDEILEGLNFNLTPEAQIHGEGQELLRTLNQDLSQQLTGTGNGLSGLKLV 128
Db 81 SKDDTKAQLQGLHNLNLTSETADTHKGFOHLLKTLNRPDNLQTLTSSFLVNNLSLV 140
Qy 129 DKFLEDVKLYHSEAFVFGDTEEDFHVQVTVKVPMMKRLGHNFIHQCKKLSWSVLLMK 248
Db 141 EKFLVEVKNHYHSEAFVFNADSEAKKTINSFVEKATHGKIVDLVKLEIDTVLALVNY 200
Qy 189 IFKQKWERPFVKDTEEDFHVQVTVKVPMMKRLGHNFIHQCKKLSWSVLLMKYLGN 248
Db 201 IFKQKWERPFVKDTEEDFHVQVTVKVPMMKRLGHNFIHQCKKLSWSVLLMKYLGN 260
Qy 249 ATAIFFLPDGKLOHLENLTHTDITKLENEEDRRSASLHLPKLSITGTGYDLKSVLG 308
Db 261 ATAIFFLPDGKLOHLENLTHTDITKLENEEDRRSASLHLPKLSITGTGYDLKSVLG 320
Qy 309 ITKVSNGADLSGVTEAPLKLSKAVHKAVLTIDEKGTAAAGAMFLEAIPMSIPPEVKFN 368
Db 321 ITKVSNGADLSGITDTPVPLKLSKAVHKAVLTIDEKGTAAAGTTLVLEAPMSIPDVCFK 380
Qy 369 KPFVFLMIEQNTKSPFLPMGKVVNPTQ 394
Db 381 NPFVFLMIEQNTKSPFLPMGKVVNPTQ 406

RESULT 8
S54981
alpha-1-antitrypsinase isoform E precursor - rabbit
C:Species: Oryctolagus cuniculus (domestic rabbit)
C:Date: 28-Oct-1996 #sequence_revision 07-Feb-1997 #text_change 20-Jun-2000
C:Accession: S54981; S72199
R:Saito, A.; Sinohara, H.
Biochem. J. 307, 369-375, 1995
A:Title: Rabbit alpha-1-antitrypsinase E: a novel recombinant serpin which does not i
A:Reference number: S54981; MUID:95251597; PMID:7733871
A:Accession: S54981
A:Molecule type: mRNA
A:Residues: 1-413 <SAI1>
A:Cross-references: EMBL:D17725; NID:g1008927; PIDN:BA04579.1; PID:g1008928
A:Accession: S72199
A:Molecule type: protein
A:Residues: 25-33/374-387 <SAI2>
C:Superfamily: antithrombin III
C:Keywords: acute phase; emphysema; glycoprotein; plasma; serine proteinase inhibitor
F:1-24/Domain: signal sequence #status predicted <SIG>
F:25-413/Product: alpha-1-antitrypsinase E #status experimental <MAT>

Query Match 50.2%; Score 1342; DB 2; Length 413;
Best Local Similarity 65.5%; Pred. No. 6.5e-80;
Matches 254; Conservative 59; Mismatches 75; Indels 0; Gaps 0;
Qy 7 DAAQKTDTHSHDQDHTFNKTPNLAFAFSLYROLAQHSNSTNIFFSPVSIATAFAMLS 66
Db 25 DEAQETAVSSHQDHPACHRIAPSLAEFALSILYREVAHESNTNIFLSPSLIATLALMS 84
Qy 67 LGTKADTHDEILEGLNFNLTPEAQIHGEGQELLRTLNQDLSQQLTGTGNGLSGLKLV 126
Db 85 LGAKGDTHTQVLEGLKFNLTETAEAQIHGDFPHLLHTVNRPDSELOLQAGNALVYHVNK 144
Qy 127 LVKDFLEDVKLYHSEAFVFGDTEEDFHVQVTVKVPMMKRLGHNFIHQCKKLSWSVLLMK 186
Db 145 LQHKFLEDKAKLYQSEAFVLDPRDPEQAKTKINSHVKGTRGKIVDLVQELDARTLLALV 204

C:Superfamily: antithrombin III

Query Match 49.8%; Score 1334; DB 2; Length 402;

Best Local Similarity 64.6%; Pred. No. 2.1e-79;

Matches 250; Conservative 69; Mismatches 66; Indels 2; Gaps 2;

QY 10 QKDTSHDDQDHPFNKIPNLAFAFSLYROLAHQSNSTNIFSPVSIATAFAMLSLGT 69

Db 17 QETDTSQKQDS-PASHEIATNLGDFALISLYRELHVSQNTSNIFSPVSIATAFAMLSLGS 75

QY 70 KADTHDEILGLNLTETPEAQIHGFEQELLRLNQPDSQQLTGTGNGFLFSEGLKLVLD 129

Db 76 KGDTHQILEGLQFNLTQTSSEADIHKSQHLQLTLNRPDSELSQSTGNGFLFVNNDLKLVE 135

QY 130 KFLVDVKLYHSAFTVNFSGDTEAAKQINDYVEKGTQGIQVLDVLYKELDRDTVFALVNYI 189

Db 136 KFLDEAKNHYQAEVSVNFAESEAKKVINDFVEKGTQGIQVLYKELDQDQVTFALVNYI 195

QY 190 FFKGKWERPFVKDTEEDFHVQDVTVTKVPMKRLGFMNIQHCCKLSSWVLLMKYLGN 249

Db 196 LFKGKWKPKDPENTEEAEFHVQDVTVTKVPMKRLGFMNIQHCCKLSSWVLLMKYLGN 255

QY 250 TAIFFLPDGKQKQHLNLTETPEAQIHGFEQELLRLNQPDSQQLTGTGNGFLFSEGLKLVLD 309

Db 256 SAVFLPDGKQKQHLNLTETPEAQIHGFEQELLRLNQPDSQQLTGTGNGFLFSEGLKLVLD 315

QY 310 TKVFSNGADLSGVTEE-APLKLKSAVKAVLTIDEKGTGAAGAMFLEAIPMSIPPEVKFN 368

Db 316 TRIFNNGADLSGVTEE-APLKLKSAVKAVLTIDEKGTGAAGAMFLEAIPMSIPPEVKFN 375

QY 369 KPFVFLMIEQNTKSPFLFMGVNPTOK 395

Db 376 HPFLFIIEEHTQSPFLFMGVNPTOK 402

RESULT 12

I49452

alpha-1-antitrypsin precursor - mouse

C:Species: Mus musculus (house mouse)

C>Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change 16-Jul-1999

C:Accession: I49452

R:Sifers, R.N.; Ledley, F.D.; Reed-Fourquet, L.; Ledbetter, D.H.;

Genomics 6, 100-104, 1990

A:Title: Complete cDNA sequence and chromosomal localization of mouse alpha-1-antitrypsin

A:Reference number: I49452; MUID:90152670; PMID:2303252

A:Accession: I49452

A>Status: preliminary; translated from GB/EMBL/DBJ

A:Molecule type: mRNA

A:Residues: 1-413 <RES>

A:Cross-references: GB:M25529; NID:g191549; PIDN:AAA37132.1; PID:g309079

C:Superfamily: antithrombin III

Query Match 49.8%; Score 1333; DB 2; Length 413;

Best Local Similarity 64.6%; Pred. No. 2.5e-79;

Matches 250; Conservative 69; Mismatches 66; Indels 2; Gaps 2;

QY 10 QKDTSHDDQDHPFNKIPNLAFAFSLYROLAHQSNSTNIFSPVSIATAFAMLSLGT 69

Db 28 QETDTSQKQDS-PASHEIATNLGDFALISLYRELHVSQNTSNIFSPVSIATAFAMLSLGS 86

QY 70 KADTHDEILGLNLTETPEAQIHGFEQELLRLNQPDSQQLTGTGNGFLFSEGLKLVLD 129

Db 87 KGDTHQILEGLQFNLTQTSSEADIHKSQHLQLTLNRPDSELSQSTGNGFLFVNNDLKLVE 146

QY 130 KFLVDVKLYHSAFTVNFSGDTEAAKQINDYVEKGTQGIQVLDVLYKELDRDTVFALVNYI 189

Db 147 KFLDEAKNHYQAEVSVNFAESEAKKVINDFVEKGTQGIQVLYKELDQDQVTFALVNYI 206

QY 190 FFKGKWERPFVKDTEEDFHVQDVTVTKVPMKRLGFMNIQHCCKLSSWVLLMKYLGN 249

Db 207 LFKGKWKPKDPENTEEAEFHVQDVTVTKVPMKRLGFMNIQHCCKLSSWVLLMKYLGN 266

QY 250 TAIFFLPDGKQKQHLNLTETPEAQIHGFEQELLRLNQPDSQQLTGTGNGFLFSEGLKLVLD 309

Db 316 TRIFNNGADLSGVTEE-APLKLKSAVKAVLTIDEKGTGAAGAMFLEAIPMSIPPEVKFN 375

QY 369 KPFVFLMIEQNTKSPFLFMGVNPTOK 395

Db 376 HPFLFIIEEHTQSPFLFMGVNPTOK 402

RESULT 14

JX0267

alpha-1-antiprotease S-1 precursor - rabbit

C:Species: Oryctolagus cuniculus (domestic rabbit)

C>Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 20-Jun-2000

C:Accession: JX0267

R:Saito, A.; Sinohara, H.

J. Biochem. 113, 456-461, 1993

A:Title: Rabbit plasma alpha-1-antiprotease s-1: cloning, sequencing, expression, a

Db 267 SAVFLPDGKQKQHLNLTETPEAQIHGFEQELLRLNQPDSQQLTGTGNGFLFSEGLKLVLD 326

QY 310 TKVFSNGADLSGVTEE-APLKLKSAVKAVLTIDEKGTGAAGAMFLEAIPMSIPPEVKFN 368

Db 327 TRIFNNGADLSGVTEE-APLKLKSAVKAVLTIDEKGTGAAGAMFLEAIPMSIPPEVKFN 386

QY 369 KPFVFLMIEQNTKSPFLFMGVNPTOK 395

Db 387 HPFLFIIEEHTQSPFLFMGVNPTOK 413

RESULT 13

I49472

alpha-1-antiprotease inhibitor 3 - mouse

C:Species: Mus musculus (house mouse)

C>Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change 16-Jul-1999

C:Accession: I49472

R:Barriello, F.; Krauter, K.S.

Proc. Natl. Acad. Sci. U.S.A. 88, 9417-9421, 1991

A:Title: Multiple murine alpha 1-protease inhibitor genes show unusual evolutionary d

A:Reference number: I49470; MUID:92052104; PMID:1946354

A:Accession: I49472

A>Status: preliminary; translated from GB/EMBL/DBJ

A:Molecule type: mRNA

A:Residues: 1-413 <RES>

A:Cross-references: GB:M75720; NID:g191845; PIDN:AAC28868.1; PID:g191846

C:Genetics:

A:Gene: alpha-1 PI-3

C:Superfamily: antithrombin III

Query Match 49.7%; Score 1329; DB 2; Length 413;

Best Local Similarity 64.6%; Pred. No. 4.5e-79;

Matches 250; Conservative 68; Mismatches 67; Indels 2; Gaps 2;

QY 10 QKDTSHDDQDHPFNKIPNLAFAFSLYROLAHQSNSTNIFSPVSIATAFAMLSLGT 69

Db 28 QETDTSQKQDS-PASHEIATNLGDFALISLYRELHVSQNTSNIFSPVSIATAFAMLSLGS 86

QY 70 KADTHDEILGLNLTETPEAQIHGFEQELLRLNQPDSQQLTGTGNGFLFSEGLKLVLD 129

Db 87 KGDTHQILEGLQFNLTQTSSEADIHKSQHLQLTLNRPDSELSQSTGNGFLFVNNDLKLVE 146

QY 130 KFLVDVKLYHSAFTVNFSGDTEAAKQINDYVEKGTQGIQVLDVLYKELDRDTVFALVNYI 189

Db 147 KFLDEAKNHYQAEVSVNFAESEAKKVINDFVEKGTQGIQVLYKELDQDQVTFALVNYI 206

QY 190 FFKGKWERPFVKDTEEDFHVQDVTVTKVPMKRLGFMNIQHCCKLSSWVLLMKYLGN 249

Db 207 LFKGKWKPKDPENTEEAEFHVQDVTVTKVPMKRLGFMNIQHCCKLSSWVLLMKYLGN 266

QY 250 TAIFFLPDGKQKQHLNLTETPEAQIHGFEQELLRLNQPDSQQLTGTGNGFLFSEGLKLVLD 309

Db 267 TAVFLPDGKQKQHLNLTETPEAQIHGFEQELLRLNQPDSQQLTGTGNGFLFSEGLKLVLD 326

QY 310 TKVFSNGADLSGVTEE-APLKLKSAVKAVLTIDEKGTGAAGAMFLEAIPMSIPPEVKFN 368

Db 327 TRIFNNGADLSGVTEE-APLKLKSAVKAVLTIDEKGTGAAGAMFLEAIPMSIPPEVKFN 386

QY 369 KPFVFLMIEQNTKSPFLFMGVNPTOK 395

Db 387 HPFLFIIEEHTQSPFLFMGVNPTOK 413

A:Reference number: JX0267; MUID:93293795; PMID:8514734

A:Accession: JX0267

A:Molecule type: mRNA

A:Residues: 1-413 <SAI>

A:Cross-references: GB:dl6104; NID:g286191; PIDN:BAA03678.1; PID:g303762

A:Experimental source: liver

A:Note: part of this sequence, including the amino end of the mature protein, was confirmed

C:Superfamily: antithrombin III

C:Keywords: glycoprotein

F:1-24/Domain: signal sequence #status predicted <SIG>

F:25-413/Product: alpha-1-antitrypsinase S-1 #status experimental <MAT>

F:65,102,266/Binding site: carboxylate (Asn) (covalent) #status predicted

Query Match 49.5%; Score 1325; DB 2; Length 413;

Best Local Similarity 65.2%; Pred. No. 8.3e-79;

Matches 253; Conservative 56; Mismatches 77; Indels 0; Gaps 0;

QY 7 DAAQKTDTSHTDQDPTNKIPNLAFAFSLYROLAQHSNSTIFFSPVSIATAFAMLS 66

DB 25 DEAQETAVSSHEQDHPACHRIAPSLAEFALSLYREVAHESNTTNIFFSPVSIATAFAMLS 84

QY 67 LGTKADTHDEILEGNLFNLTEIPRAQIHGEOELLRLTNQDLSQQLTGTGNGFLSEGLK 126

DB 85 LGAKGDTHTOVLEGLKFLNLTETAEQAQIHGDFRHLHTVNRDSELQLAAGNALVYHNLK 144

QY 127 LVDFKLEDVKKLYHSEAFVNFGEDEAKKOINDYVEKGTQKIVDLVKELDRDRTVFALV 186

DB 145 LQHKLEDAKNLYQSEAFVDFERDEQAKTKINSHVEKGTGKIVDLVQELDARTLLALV 204

QY 187 NYIFFKQKWERPFYKDEEDFHVDQVTVKVPMMKRLGMFNIOHCKKLSWVLLMKYL 246

DB 205 NYVFFKQKWERPFEPENTKEEDFHVDATTVRVPMMSRLGMVYKFGHSTLASTVLRMDYK 264

QY 247 GNATFIFLDPDEGKLOHLENELTHDIITKFLNEDRRSASLHLPKLSITGTGTYDLKSVLQ 306

DB 265 GNATFIFLDPDEGKLOHLEDLTTELIAKFLAKSFSRVRRFKLSISGTYDLKPLIGK 324

QY 307 LGITVFNSGADLSGVTBEEAPLKSQVHKAHLVITDERGTEAAGAMFLEAIPMSIPPVEVK 366

DB 325 LGITQVFSNADLSGITQEPLKYSQALHKAHLVITDERGTEAAGATFVGINPSSILPESVI 384

QY 367 FNKPFVFLMIEQNTKSPFLMGKVVNPTQ 394

DB 385 FDRPELFVIYSHELKSPFLVGVKVDPTQ 412

RESULT 15

I49473

alpha-1 proteinase inhibitor 4 - mouse

C:Species: Mus musculus (house mouse)

C:Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change 16-Jul-1999

C:Accession: I49473

R:Barriello, F.; Krauter, K.S.

Proc. Natl. Acad. Sci. U.S.A. 88, 9417-9421, 1991

A:Title: Multiple murine alpha 1-protease inhibitor genes show unusual evolutionary divergence

A:Reference number: I49470; MUID:92052104; PMID:1946354

A:Accession: I49473

A:Status: preliminary; translated from GB/EMBL/DBJ

A:Molecule type: mRNA

A:Residues: 1-413 <RES>

A:Cross-references: GB:M75718; NID:g191847; PIDN:AAC28867.1; PID:g191848

C:Genetics:

A:Gene: alpha-1 PI-4

C:Superfamily: antithrombin III

Query Match 49.2%; Score 1316; DB 2; Length 413;

Best Local Similarity 63.8%; Pred. No. 3.2e-78;

Matches 247; Conservative 68; Mismatches 70; Indels 2; Gaps 2;

QY 10 QKTDTSHTDQDPTNKIPNLAFAFSLYROLAQHSNSTIFFSPVSIATAFAMLSLGT 69

DB 28 QETDTSQKQDS-PASHEIATNLGDFALRYRELHVHQSNTIFFSPVSIATAFAMLSLGS 86

QY 70 KADTHDEILEGNLFNLTEIPRAQIHGEOELLRLTNQDLSQQLTGTGNGFLSEGLKLV 129

DB 87 KGDTHQIILEGLQFNLTQTSSEADIIHKSFOHLLQTLNRPDSELOLSTGNGFLFVNDKLV 146

QY 130 KFEDEVKLYHSEAFVNFGEDEAKKOINDYVEKGTQKIVDLVKELDRDRTVFALVNY 189

DB 147 KFLAEAKNHYQAEVFSVNFASSEAAKVINDFVEKGTQKIVENYKLLDQDVFALANVI 206

QY 190 FFKGKWERPFYKDEEDFHVDQVTVKVPMMKRLGMFNIOHCKKLSWVLLMKYL 249

DB 207 LFKGKWKQPPDPENTEEAEHFVDESTTVKVPMTLSGMLDVHHCMLSSWVLLMDYAGNT 266

QY 250 TATFIFLDPDEGKLOHLENELTHDIITKFLNEDRRSASLHLPKLSITGTGTYDLKSVLQ 309

DB 267 TAVFLLPDDGKMQHLEQTLNKLISQFLLNRRRSDAQIHIPRLSISGTYDLKSVLQ 326

QY 310 TKVFSNGADLSGVTBEEAPLKSQVHKAHLVITDERGTEAAGAMFLEAIPMSIPPVEVK 368

DB 327 TRIFNNGADLSGITEENAPLKSQVHKAHLVITDERGTEAAGATFVGINPSSILPESVI 384

QY 369 KPEVFLMIEQNTKSPFLMGKVVNPTQ 395

DB 387 HPFLFIIFEHTQSPIFVGVKVDPTQ 413

Search completed: November 30, 2002, 12:37:30

Job time: 14.5 secs